

ADMINISTRATIVE
RECORD

**FIELD CONSTRUCTION PLAN
FOR
RICHARDSON FLAT TAILINGS SITE**

EPA SITE ID: UT980952840

December 14, 2007

Prepared for:

**United Park City Mines
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Park City, UT 84060**

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P.O. Box 1450
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1.0 INTRODUCTION

This Field Construction Plan (FCP) details the construction components, stormwater management and procedures and completion milestones to be undertaken for each construction task. The tasks are required to complete the selected remedial remedy approved by the United States Environmental Protection Agency (EPA) at the Richardson Flat Tailings Site, Site ID UT980952840, (The "Site") near Park City, Utah.

A full description of Site background, investigative history, specifications, health and safety, design elements, project management and construction procedures are presented in the Remedial Design and Remedial Action Work Plan (RD/RA, RMC 2007a). The FCP is intended to act as a planning supplement to the RD/RA with a focus on stormwater runoff protection.

1.1 Remedy Description and Overview

The selected remedy addresses mill tailings located in several areas of the Site, including the main impoundment (Area A), an area south of the diversion ditch (tailings south of the diversion ditch – Area B), and the wetlands west of the embankment. Other media addressed in the selected remedy are sediments and surface water located within the Site boundary. The mill tailings and other media are not considered principal threat waste; therefore, appropriate remedial actions for the waste include excavation of tailings in source areas with relocation to areas within the impoundment and containment of the tailings through capping. Additionally, the selected remedy allows for future disposal of Bevill-exempt mine waste from other remediation areas within the Park City area on the tailings impoundment and placement of restrictions on future land and groundwater use.

The remedy detailed in this RD/RA is specified in the Record of Decision (ROD). The selected remedial alternative contains the following elements:

- Removal of contaminated materials in selected areas south of the South Diversion Ditch (Area B) where tailings may be in contact with surface water or shallow groundwater. Excavation will extend to the visual interface between the tailings and native soils or to a depth where a clay soil cover can be placed;
- Removal of contaminated materials in the wetland west of the main embankment. This would include excavation of contaminated material to achieve the Site PRG of 310 parts per million (ppm) lead. This activity will only be performed after remedial activities are completed in the South Diversion Ditch;
- Placing excavated materials in the impoundment. The impoundment will be used by United Park and others to accommodate similar Bevill-exempt mine waste in the upper Silver Creek watershed;
- Placement of a minimum twelve inches of low permeability soil cover on areas where tailings are left in-place, including the impoundment. The cover will be machine compacted. Upon completion of the low permeability soil cover, a six-inch topsoil cover will be placed. The final surface cover will be a minimum of eighteen inches thick and the surface will be graded to control surface stormwater runoff and drainage;
- Placement of twelve-inches of clean gravel over contaminated sediments in the South Diversion Ditch, including the pond located near the terminus of the ditch. Additional discussions with EPA and in consideration of potential Natural Resource Damages UPCM may remove contaminated sediments in the ditch and pond;
- Installation of a rock wedge buttress along the oversteepened portion of the embankment for about 400 feet of the total embankment length of 800 feet;
- Regrading and revegetation of areas affected by remediation at the Site. Areas in which tailings are removed will be restored, where possible, to pre-tailings topographic conditions; and
- Monitoring Site conditions (vegetation and erosion) on a bi-annual basis for two to five years. Surface water will be monitored for total and dissolved cadmium, lead, zinc and hardness according to Section 2.2 in the SOW.

2.0 Construction Phasing

A Construction Task Plan is presented in Figure 2-1. As described in the RD/RA, the construction activities are divided into nine sequential work tasks which are based on geographic areas and the proposed work progression to be followed at the Site (e.g. Task 1 will be completed prior to Task 2). Construction tasks are grouped in yearly construction phases according to anticipated annual workloads and will be conducted according to the Construction Phasing Plan that is presented in Figure 2-2. Multiple tasks may be constructed concurrently if the work does not impact another task area. The work progression will generally follow an upstream to downstream progression. This will insure that remediated areas are not recontaminated by upstream sources.

3.0 Stormwater Management

Stormwater management will be conducted to:

- Reduce the potential for offsite migration of sediments, soil and tailings; and
- Eliminate the re-contamination of areas that have been covered or have undergone source removal.

General stormwater management elements include:

- Berms, wattle and silt fencing as required to prevent the migration of materials from work areas. These elements may remain in-place until revegetation efforts are complete;
- Sediment barriers in the South Diversion Ditch, pond and wetland to capture sediment and prevent downstream off-site migration. These in-flow barriers may include a combination of, filter fabric, drop structures and/or temporary retention structures.
- Stormwater runoff protection measures will remain in-place until revegetation efforts are complete;
- Sediment basins will be constructed on an as-needed basis;

- General grading to direct potential stormwater runoff to sediment basins and traps as needed;
- Hay or straw bale barriers will be placed in appropriate ephemeral channel features that drain from work areas. The hay bales will be placed downgradient from the silt fence or wattle barrier; and
- A supply of hay or straw bales and wattle material will be stored onsite during Remedial Action construction.

General procedures to reduce the tracking of contaminated materials into uncontaminated areas will include:

- All trucks and equipment working in contaminated materials (e.g. tailings and sediments) will be decontaminated prior to working with clean materials; Decontamination procedures are described in Section 11.8 of the RD/RA;
- A stabilized construction entrance will be used, if necessary, to remove gross contamination for trucks hauling tailings;
- All trucks and equipment will be decontaminated prior to leaving the site and/or moving from contaminated to clean work areas; and
- Dust control will be conducted as necessary as described in Section 11.1.1 of the RD/RA.

4.0 Work Tasks

This section describes the individual construction elements and procedures required to complete each Work Task. Work for each task will be conducted to reach the milestones listed for each task (e.g. the task is complete when all of the milestones are met). Specifications and work procedures are described in the RD/RA.

4.1 Work Task 1

Work involved in Task 1:

- 1) Construction of the Wedge Buttress; and
- 2) Cover placement, grading, confirmation sampling, erosion control structure placement and revegetation in areas F-1 and F-7 (Figure 2-1).

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- Silt fence or wattle will be placed below the Wedge Buttress construction area. The silt fence or wattle will prevent the migration of soils into the wetland area;
- Berm and wattle (if required) on the south side of the construction zones in areas F-1 and F-7. The berm and wattle (if required) will prevent the migration of tailings and soils into the South Diversion Ditch. The work in this area consists of placing rock cover and hence, the potential for tailings migration is minimal; and
- Sediment barriers will be placed as needed at the culvert crossing and the downstream end of the South Diversion Ditch directly above the pond. This barrier will prevent the downstream migration of any sediment that has inadvertently migrated into the South Diversion Ditch and will remain in-place for the duration of the Remedial Action.

Task 1 Milestones:

- 1) Completion of the Wedge Buttress;
- 2) Cover Placement in areas F-1 and F-7 (Figure 2-1) is complete;
- 3) Collect confirmation samples and verify cover installation meets specifications; and
- 4) Reclamation (surface grading and drainage control) is complete.

4.2 Work Task 2

Work involved in Task 2:

- 1) Source removal, grading, confirmation sampling, topsoil placement, channel reconstruction and revegetation in area B-2-E (Figure 2-1).

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- Silt fence or wattle will be placed along the eastern, downgradient side of the excavation area. The silt fence or wattle will prevent the migration of tailings and soils from the work zone. The silt fence or wattle will remain in place until revegetation efforts are complete;
- The raised elevation of the county road will prevent the migration of soil and tailings to the south; and
- The reconstructed pond will act as a sediment detention pond for all work south of the county road. Sediments entering the pond will not be contaminated;
- Hay bale barriers will be placed in ephemeral channels that drain from the work zone. The hay bales will be placed downgradient from the silt fence or wattle barrier.
- A sediment barrier may be placed at the culvert that passes below the county road.

Task 2 Milestones:

- 1) Source removal in area B-2-E is complete;
- 2) Confirmation samples have been collected and verify source removal;
- 3) Channel reconstruction and topsoil placement are complete; and
- 4) Reclamation (surface grading drainage control and revegetation) is complete.

4.3 Work Task 3

Work involved in Task 3:

- 1) Source removal, grading, confirmation sampling, topsoil placement, channel reconstruction and revegetation in area B-3-E (Figure 2-1).

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- Silt fence or wattle will be placed along northern portion of the work zone along the South Diversion Ditch. The silt fence or wattle will prevent the migration of tailings

and soils from the work zone into the ditch. The silt fence or wattle will remain in place until revegetation efforts are complete;

- The raised elevations of the county road will prevent the migration of soil and tailings to the south; and
- Hay bale barriers will be placed in ephemeral channels that drain from the work zone. The hay bales will be placed downgradient from the silt fence or wattle barrier.

Task 3 Milestones:

- 1) Source removal in area B-3-E is complete;
- 2) Confirmation samples have been collected and verify source removal;
- 3) Channel reconstruction and topsoil placement are complete; and
- 4) Reclamation (surface grading, drainage control and revegetation) is complete.

4.4 Work Task 4

Work involved in Task 4:

- 1) Sediment removal, grading, confirmation sampling, topsoil placement, erosion material/structures placement and revegetation of the east portion of the South Diversion Ditch (Figure 2-1) upstream from the current culvert crossing.

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- Sediment barriers placed during Task 1 at the culvert crossing and the downstream end of the South Diversion Ditch directly above the pond. These barriers will prevent the downstream migration of any material during sediment removal and will remain in-place for the duration of the Remedial Action.

Task 4 Milestones:

- 1) Sediment removal in the eastern half of the South Diversion Ditch is complete;
- 2) Confirmation samples have been collected and verify sediment removal;

- 3) Channel reconstruction is complete; and
- 4) Reclamation (topsoil placement, channel grading, drainage control and revegetation) is complete.

4.5 Work Task 5

Work involved in Task 5:

- 1) Source removal, grading, confirmation sampling, topsoil placement, channel reconstruction and revegetation in area B-1-W (Figure 2-1).

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- Silt fence or wattle will be placed along northern portion of the work zone along the South Diversion Ditch. The silt fence or wattle will prevent the migration of tailings and soils from the work zone into the ditch. The silt fence or wattle will remain in place until revegetation efforts are complete; and
- The sediment barrier placed at the downstream end of the SDD, above the pond, as described in Task 1.
- Hay bale barriers will be placed in ephemeral channels that drain from the work zone. The hay bales will be placed downgradient from the silt fence or wattle barrier.

Task 5 Milestones:

- 1) Source removal in area B-1-W is complete;
- 2) Confirmation samples have been collected and verify source removal;
- 3) Topsoil placement is complete; and
- 4) Reclamation (surface grading, drainage control and revegetation) is complete.

4.6 Work Task 6

Work involved in Task 6:

- 1) Sediment removal, grading, confirmation sampling, cover soil placement, erosion material/structures placement and revegetation of the west portion of the South Diversion Ditch (Figure 2-1) upstream from the Diversion Ditch Pond to the culvert crossing.

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- Sediment barriers placed during Task 1 at the culvert crossing and the downstream end of the SDD directly above the pond. These barriers will prevent the downstream migration of any sediment that has inadvertently migrated into the South Diversion Ditch and will remain in-place for the duration of the Remedial Action.
- The sediment barrier at the downstream end of the SDD will be the primary protection for this Task.

Task 6 Milestones:

- 1) Sediment removal in the western half of the South Diversion Ditch is complete;
- 2) Confirmation samples have been collected and verify sediment removal;
- 3) Channel reconstruction is complete; and
- 4) Reclamation (channel grading, drainage control and revegetation) is complete.

4.7 Work Task 7

Work involved in Task 7:

- 1) Sediment removal, grading, confirmation sampling, cover soil placement, erosion material/structures placement and revegetation of the Diversion Ditch Pond (Figure 2-1).

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- Sediment barriers will be placed on the downstream side of the pond and upstream of the adjacent wetland; and
- Sediment barriers will be placed on the downstream side of the wetland above and/or below the culvert that flows beneath Highway 248. These barriers will be the final catch-all for the Site.

Task 7 Milestones:

- 1) Sediment removal in the Diversion Ditch Pond is complete;
- 2) Confirmation samples have been collected and verify sediment removal;
- 3) Pond reconstruction is complete; and
- 4) Reclamation (grading, drainage control and revegetation) is complete.

4.8 Work Task 8

Work involved in Task 8:

- 1) Sediment removal, grading, confirmation sampling, cover soil placement, wetland construction, erosion material/structures placement and revegetation of the Wetlands below the main embankment (Figure 2-1).

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- The sediment barriers installed during Task 7 and placed on the downstream side of the wetland above and below the culvert that flows beneath Highway 248; and
- Intermediate sediment barriers will be placed within the wetland work areas on an as-needed basis.
- A sediment pond will be constructed at the downstream end of the wetland.

Task 8 Milestones:

- 1) Sediment removal in the Wetlands below the Embankment is complete;
- 2) Confirmation samples have been collected and verify sediment removal;

- 3) Wetland reconstruction is complete; and
- 4) Reclamation (grading and revegetation) is complete.

4.9 Work Task 9

Work involved in Task 9:

- 1) Cover placement, grading, confirmation sampling, erosion control structure placement and revegetation in area F-8 (Figure 2-1).

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- Berm and wattle (if required) separating the work areas from areas in which construction has been completed. This is a low lying area and will remain at a lower elevation than the rest of the impoundment. Therefore, stormwater run-off should not be a concern. The berm and wattle (if required) will prevent the migration of tailings and soils into completed areas. The berm and wattle will remain in place until revegetation efforts are complete. The work in this area consists of placing soil cover and hence, the potential for tailings migration is minimal.

Task 9 Milestones:

- 1) Cover Placement in area F-8 (Figure 2-1) is complete;
- 2) Confirmation samples have been collected and verify cover placement meets specifications; and
- 3) Reclamation (surface grading, drainage control and revegetation) is complete.

4.10 Work Task 10

Work involved in Task 10:

- 1) Cover placement, grading, confirmation sampling, erosion control structure placement and revegetation in areas F-4 and F-5 (Figure 2-1).

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- Berm and wattle (if required) separating the work areas from areas in which construction has been completed. The berm and wattle (if required) will prevent the migration of tailings and soils into completed areas. The berm and wattle will remain in place until revegetation efforts are complete. The work in this area consists of placing soil cover and hence, the potential for tailings migration is minimal.
- A berm and wattle will be placed in areas adjacent to the SDD. Remediation of the SDD will be completed prior to final covering and grading of the Impoundment Task 10 areas.

Task 10 Milestones:

- 1) Cover Placement in areas F-4 and F-5 (Figure 2-1) is complete;
- 2) Confirmation samples have been collected and verify cover placement meets specifications; and
- 3) Reclamation (surface grading, drainage control and revegetation) is complete.

4.11 Work Task 11

Work involved in Task 11:

- 1) Cover placement, grading, confirmation sampling, erosion control structure placement and revegetation in areas F-7a and F-6 (Figure 2-1).

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- Berm and wattle (if required) separating the work areas from areas in which construction has been completed. The berm and wattle (if required) will prevent the migration of tailings and soils into completed areas. The berm and wattle will remain in place until revegetation efforts are complete. The work in this area consists of placing soil cover and hence, the potential for tailings migration is minimal.

- A berm and wattle will be placed in areas adjacent to the SDD. Remediation of the SDD will be completed prior to final covering and grading of the Impoundment Task 11 areas.

Task 11 Milestones:

- 1) Cover Placement in areas F-7a and F-6 (Figure 2-1) is complete;
- 2) Confirmation samples have been collected and verify cover placement meets specifications; and
- 3) Reclamation (surface grading, drainage control and revegetation) is complete.

4.12 Work Task 12

Work involved in Task 9:

- 1) Cover placement, grading, confirmation sampling, erosion control structure placement and revegetation in areas F-2 and F-3 (Figure 2-1).

Stormwater runoff protection elements to be implemented prior to and during construction will include:

- Berm and wattle (if required) separating the work areas from areas in which construction has been completed. The berm and wattle (if required) will prevent the migration of tailings and soils into completed areas. The berm and wattle will remain in place until revegetation efforts are complete. The work in this area consists of placing soil cover and hence, the potential for tailings migration is minimal.
- A berm and wattle will be placed in areas adjacent to the SDD. Remediation of the SDD will be completed prior to final covering and grading of the Impoundment Task 12 areas.

Task 12 Milestones:

- 1) Cover Placement in areas F-2 and F-3 (Figure 2-1) is complete;
- 2) Confirmation samples have been collected and verify cover placement meets specifications; and

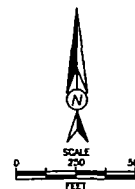
3) Reclamation (surface grading, drainage control and revegetation) is complete.

5.0 REFERENCES

Resource Management Consultants, Inc (RMC), 2007a, Remedial Design/Remedial Action Plan (RD/RA), Richardson Flat, Site ID Number: UT980952840, With Attached Work Plan.

Resource Management Consultants, Inc (RMC), 2007b, Field Sampling Plan, Remedial Investigation, Richardson Flat, Site ID Number: UT980952840, With Attached Work Plan.

Resource Management Consultants, Inc (RMC), 2007c, Health and Safety Policy, Remedial Investigation, Richardson Flat, Site ID Number: UT980952840, With Attached Work Plan.



rdra-13.dwg

PHASE 4
WETLAND
BELOW
EMBANKMENT

PHASE 2
WET AREA
COVER

PHASE 4
DIVERSION
DITCH POND

PHASE 4
FILL AND
COVER

PHASE 4
FILL AND
COVER FOR
REC SITE

PHASE 4
FILL AND
COVER

PHASE 3
AREA B-2
EAST

PHASE 2
EAST
DIVERSION
DITCH

**STUDY
AREA
BOUNDARY**

PHASE 2
AREA B-2
EAST

LEGEND

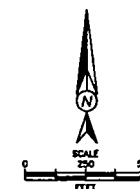
PHASE 1 - 2007

 **PHASE 2 - 2008**

PHASE 3 - 2009

 **PHASE 4 - VARIES,
UNTIL COMPLETE**

**NOTE: CONSTRUCTION DATES ARE
APPROXIMATE**



RICHARDSON FLAT RDRA

**FIGURE 2-2
CONSTRUCTION PHASING PLAN**

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DECEMBER 2007
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